B r o a d A c c e s s

PSBC12XX-X Charger Management Software User Guide

P/N 760-000332 Rev C

Table of Contents

List of Figures ____ iii

List of Tables ____ iv

1. General Information ____ 1

1.1. Specifications ____ 1

2. Installation ____ 3

2.1. Installing the Software ____ 3

2.2. Setting the IP Address of the Controller ____ 3

2.3. Connecting the Computer to the Power System ____ 4

2.3.1. Connecting to a Local Power System ____ 4

2.3.2. Connecting to a Remote Power System ____ 5

2.4. Activating the Program ____ 5

3. The Main Screen ____ 7

.3.1 Measurement Gauges ____ 8

3.2. 7-Segment Display ____ 8

3.2.1. Temperature ____ 8

3.3. Fault Status ____ 8

3.4. General Status Modes ____ 9

3.5. Picture of the Controller ____ 9

3.5.1. LED Indicator Lights ____ 10

3.5.2. Control Buttons ____ 11

.3.6 Communication Data on the Status Bar ____ 11

3.6.1. PSBC12XX Management Software *Serial* ____ 11

3.6.2. PSBC12XX Management Software *NET* ____ 12

3.7. Event Log ____ 12

3.8. Toolbar (Net only) ____ 12

4. Menus 15

4.1. File Menu 15

4.2. Connection Menu (Serial only) 15

4.2.1. Com Port 15

4.2.2. Modem 16

4.2.3. Wait for Alarm Trap 16

4.3. View Menu 16

4.4. Tools Menu 17

4.5. Set Password 18

4.6. Log Menu 18

4.7. Battery Menu 18

4.8. Help Menu 19

5. Configuring PSBC12XX 21

5.1. General Configuration 21

5.2. Setting Values 23

5.3. Setting Alarms 24

5.4. Setting Dry Contacts 25

6. Operating PSBC12XX 27

6.1. Battery Test 27

6.2. Battery Charge Mode 27

6.3. LVD 27

6.4. Restarting the Controller 28

7. Appendix A: Alarm Dry Contact Connector 29

8. Appendix B: IP Field Values 31

9. Appendix C: Troubleshooting 33

10. Appendix D: Configuring the Modems 35

10.1. Example of Modem settings 37

List of Figures

Figure 1. Adapting an RJ45 to a Serial Connector 4
Figure 2. The Main Screen (Serial) 7
Figure 3. The Power System Controller 10
Figure 4. PSBC12XX Management Software *Net's* Toolbar 12
Figure 5. Preferences Window 16
Figure 6. General Configuration Screen 22
Figure 7. Set Values Screen 23
Figure 8. Set Alarms Screen 24
Figure 9. Set Dry Contacts Screen 26
Figure 10. Alarm Connector Connections 29

List of Tables

Table 1. Specifications 1
Table 2. Fault Status List 8
Table 3. Toolbar Buttons 13
Table 4. Preferences Window Parameters 17
Table 5. General Configuration Parameters 22
Table 6. Set Values Parameters 23
Table 7. Set Alarms Parameters 25
Table 8. PSBC12XX Faults 26
Table 9. IP Field Values 31
Table 10. Modem Settings (Example) 37

1. General Information

This document provides user information for the PSBC12XX Charger Management Software.

Two Power System Monitor Controllers & Programs are available:

- PSBC12XX Management Software Serial - for a computer connected to the power system's controller via a serial cable or a modem.
- PSBC12XX Management Software Net - for a computer connected to the power system's controller via Ethernet.

These programs are password-protected. Each time you log onto the program, a password is requested the first time you try to change one of the settings or perform an action. You are not allowed to do this if you do not respond with the correct password.

1.1. Specifications

Table 1. Specifications

Feature	Description
Program	PSBC12XX Management Software
Devices	Power System PSBC12XX
Communication	RS232, SNMP/PPP
Operating System	WINTEL
Hardware Required	PEN II, 32MB MEM, 10 MB HD, SERIAL/NETWORK PORT, Network Adaptor\Serial cable\Modem\phone line
General Features	One program supports one system Real-time alarm and status information Installation possible in all Microsoft environments Multi-language support Customization to meet client requirements
Communication Features	Access from any location in the world via modem or Ethernet Remote communication by automatic dialing via a modem
User Interface Features	User-friendly Graphic User Interface LED indicators, 7-Segment Display, Toolbar Pushbutton controls Fault history and statistics logs User-programmed Dry Contacts, Alarms & Network Settings LVD and Power Supply Control

2. Installation

2.1. Installing the Software

⚠ **Note:** *Prior to installation, ensure that the screen resolution is 600 x 800 dpi or higher.*

To install the program:

1. Close all open Windows programs on your computer.
2. Insert the PSBC12XX Management Software CD in your computer's CD-ROM drive; the ***Welcome*** window of the Setup program appears on the screen.
3. Click the ***Next*** button.
4. Follow the instructions displayed in the window that appears.
5. Click the ***Next*** button.
6. Repeat Steps 4-5 until the ***Software Successfully Installed*** window appears.
7. Click the ***Finish*** button to complete the installation.

2.2. Setting the IP Address of the Controller

The power system's controller must have an IP address before PSBC12XX Management Software *Net* can be connected to it.

To set the IP address of the controller via its front panel:

1. Press ***ENT*** + to enter Editing Mode.
2. Use the arrow buttons to reach the B1 field on the 7-Segment Display (the cursor moves to a different field each time an arrow is pressed).
3. Press ***ENT*** to make it possible to edit that field.
4. Use the arrow buttons to change the value of the field (the value of the field changes each time an arrow is pressed).
5. Press ***ENT*** to save the changes made in the field.
6. Use the arrow buttons to reach the B* field.
7. Press ***ESC*** to exit Editing Mode.

To set the IP address of the controller via the Main Window of PSBC12XX Management Software *Net*:

1. Click the ***Address*** field at the top of the Main Window

2. Type the IP address of the controller into the ***Address*** field.

To connect PSBC12XX Management Software *Net* to the power system's controller:

Click the next to the ***Address*** field. When PSBC12XX Management Software *Net* is in communication with the power system, the appearance of the address bar changes to:

To disconnect PSBC12XX Management Software *Net* from the power system's controller:

Click the button next to the ***Address*** field.

2.3. Connecting the Computer to the Power System

PSBC12XX's controller has either a serial or net configuration. It is possible to change the controller configuration from Net to Serial and back by simply changing the jumpers on the Controller Card (PC157).

2.3.1. Connecting to a Local Power System

2.3.1.1. PSBC12XX Management Software *Serial*

Attach the RJ45 connector to the D9 female connector to connect the Com port of the computer to the front of the power system's controller.

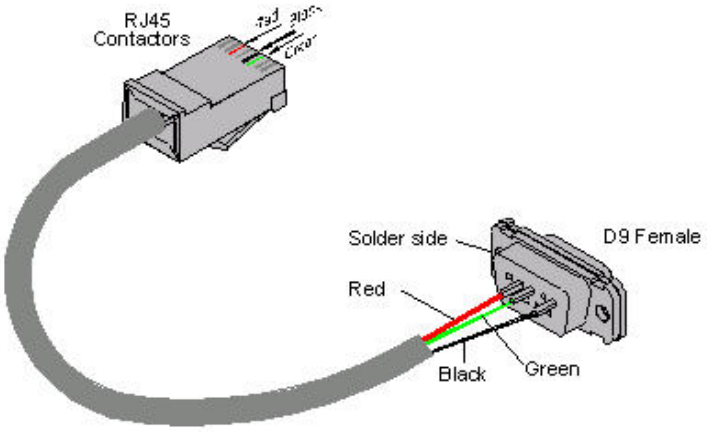


Figure 1. Adapting an RJ45 to a Serial Connector

2.3.1.2. PSBC12XX Management Software *Net*

1. Connect a crossed net cable from the net outlet on your computer to the socket on the front of the power system's controller.
2. Set the controller's IP address *(see* Setting the IP Address of the Controller, *page 3).*

2.3.2. Connecting to a Remote Power System

2.3.2.1. PSBC12XX Management Software *Serial*

Two modems are required to connect to a remote power system.

To connect the modems:

1. Connect one modem to a phone line and to the computer's Com port.
2. Connect the other modem to a phone line and to the controller's communication socket.
3. Configure both modems (see Appendix D: Configuring the Modems, page 35).

2.3.2.2. PSBC12XX Management Software *Net*

Set the IP address of the controller *(see* Setting the IP Address of the Controller, *page 3).*

2.4. Activating the Program

To activate PSBC12XX Management Software *Net* or PSBC12XX Management Software *Serial*:

Click its icon on the Desktop.

To deactivate the software:

Click the button in the main PSBC12XX Management Software window.

3. The Main Screen

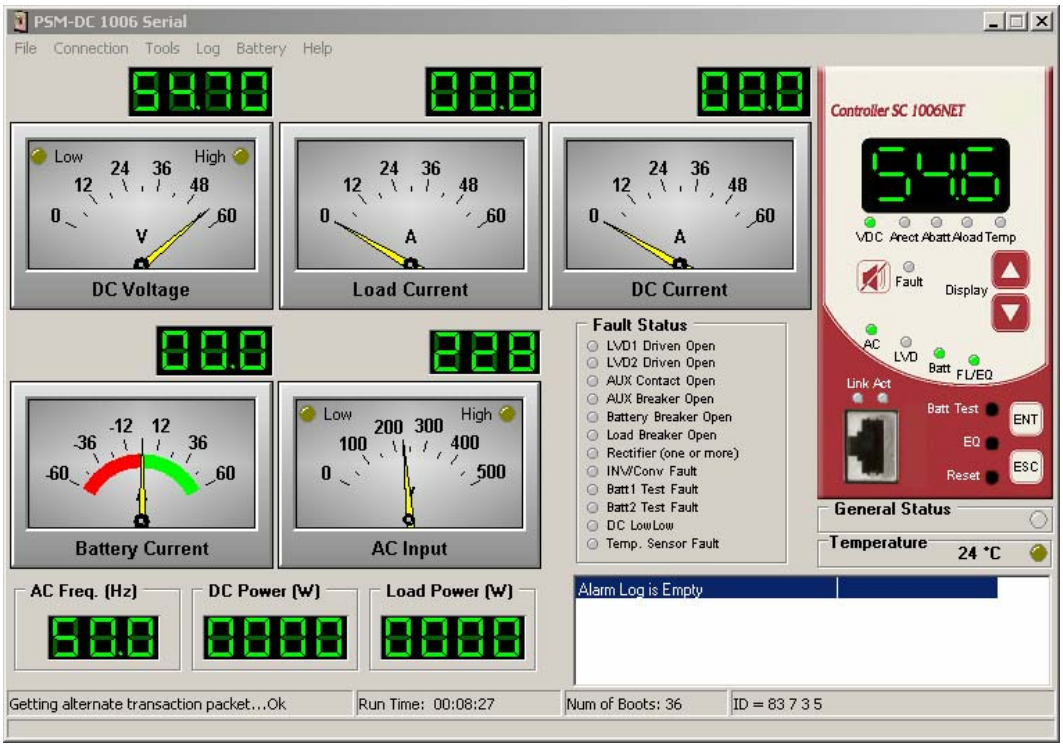


Figure 2. The Main Screen (Serial)

The Main Screen displays updated, real-time information on the status of the power system via:

- Measurement gauges
- Fault status list
- General status menu
- Picture of the power system's controller
- Communication information in Status bar

The power system is controlled via:

- Menu options (see Menus, page 15*)*
- Toolbar buttons (see Toolbar (Net only), page 12)
- Control Buttons on the picture of the controller *(see* Control Buttons, *page 11).*

⚠ **Note:** *PSBC12XX Management Software Net also contains an address bar with the IP address of the power system and a button for connecting/disconnecting to and from that address.*

3.1. Measurement Gauges

The measurement gauges on the Main Screen reports the status of the:

- *DC Voltage* - Output voltage
- Load Current - Current drawn by the load
- DC Current - Current from rectifiers
- Battery Current - Current from batteries
- AC Input - Input voltage from the mains

The ***DC Voltage*** and ***AC Input*** gauges also have warning LEDs that light up if the measured value is outside the range set by the manufacturer or the user.

3.2. 7-Segment Display

The 7-Segment Display in the picture of the controller always displays the same information as one of the measurement gauges. The lit LED under the 7-Segment Display indicates which data is being displayed:

- VDC = DC Voltage
- Arect = DC Current
- Abatt = Battery Current
- Aload = Load Current
- Temp = Temperature

The Main Screen also uses 7-Segment Displays to digitally display the real-time value of:

- AC Frequency
- DC Power
- Load Power

3.2.1. Temperature

The real-time temperature of the Power System \ Battery is displayed under the picture of the controller. A red warning LED lights up if the temperature is above or below the range specified by the manufacturer or the user.

3.3. Fault Status

The following faults are listed in the ***Fault Status*** list on the Main Screen:

Table 2. Fault Status List

Fault	Description
LVD1 Driven open	Low Voltage Disconnector 1 opened due to low output voltage (battery is disconnected from system)

Fault	Description
LVD2 Driven open	Low Voltage Disconnector 2 opened due to low output voltage (second battery is disconnected from system) *Note: This only appears when there are 2 LVDs in the system.*
Aux Contact open	Auxiliary input dry contact open
Aux Breaker open	Auxiliary input circuit breaker open
Battery Breaker open	Battery circuit breaker open (batteries are disconnected from system - no system backup or charging)
Load Breaker open	Load circuit breaker open (load is disconnected from system)
Rectifier (one or more)	Rectifier(s) are not OK
LVD Bypass closed	Fault in LVD Bypass (prevents LVD from functioning)
Batt1 Test fault	Fault in Battery 1
Batt2 Test fault	Fault in Battery 2
DC LowLow	DC output is too low
Temp. Sensor Fault	Fault in one of the 2 temperature sensors

The LED light next to each parameter shows its status. A red light indicates that the fault is active. An unlit LED indicates that the fault is inactive.

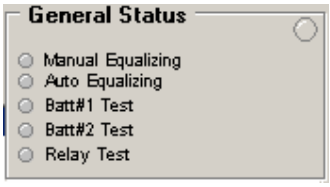
3.4. General Status Modes

A power system that is working properly is in Normal mode. Equalizing mode is a forced accelerated charging of the batteries that lasts 180 minutes.

An event changes the General status (mode) of the system to one of the following modes:

- **Manual Equalizing** (The system was manually put into Equalizing mode)
- **Auto Equalizing** (The system automatically went into Equalizing mode because the batteries were flat or because the set period of time between equalizings of the battery elapsed)
- **Battery #1 Test** (Battery #1 is being tested)
- **Battery #2 Test** (Battery #2 is being tested)
- **Relay Test** (A relay test is being performed)

The LED indicator next to ***General Status*** is lit when the system is not in Normal mode.
To view the new general status mode of the power system: Click ***General Status***. The ***General Status*** menu appears with a lit LED indicator next to the name of the new general status mode. Elapsed run time counter located next to the status indicator.



3.5. Picture of the Controller

The picture of the controller on the Main Screen displays exactly the same information as the controller on the power system itself.

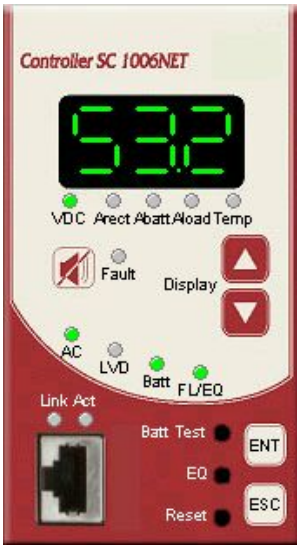


Figure 3. The Power System Controller

3.5.1. LED Indicator Lights

The LED indicator lights in the controller's picture convey the following information:

- The ***Fault*** LED indicator lights up if there is a fault in the system.
- The LED lights under the 7-Segment Display indicate which information is currently being displayed on it (see 7-Segment Display, on page 8).
- Lit Link and Act LED lights indicate that there is active communication between the controller and the program. They are unlit when the controller is disconnected.
- The other LED lights indicate the status of the power system:
  - ***AC*** is lit when there is voltage in the Mains.
  - ***LVD*** is lit when an LVD is open.
  - ***BATT*** blinks when the battery is being tested
  - ***BATT*** is lit when the battery is OK.
  - ***BATT*** is unlit when the battery fails the battery test.
  - ***FL/EQ*** is lit when the system is in ***FLOATING*** mode.
  - ***FL/EQ*** blinks when the system is in ***EQUALIZING*** mode.

3.5.2. Control Buttons

Only three control buttons are active in the program. Clicking them has the following results:

- ***Batt Test*** - Manually starts a battery test
- ***EQ*** - Manually puts the system into Equalizing mode (accelerated battery charging)
- ***Reset*** - Restarts the controller
- ***ENT*** and ***ESC*** - Not active in program

3.6. Communication Data on the Status Bar

General information regarding the status of communication between PSBC12XX Management Software and PSBC12XX status is displayed in the status bar at the bottom of the screen. Different information is displayed for the Net and Serial versions of PSBC12XX Management Software.

3.6.1. PSBC12XX Management Software *Serial*

A sample display of communication data for PSBC12XX Management Software *Serial* is:

The meaning of this is:

- ***Getting section 13 log transaction packet…OK –*** The power system is connected to the computer and is transferring data to the computer. The message ***Power System is connected to COM1*** appears when the power system is connected to the COM1 port of the computer. The message ***DISCONNECTED*** appears here when the system is disconnected from the computer, indicating a communication failure. It is not possible to control or monitor the system when it is disconnected.
- ***Run time: 4:34:24*** - Amount of time since the controller was restarted
- ***Num of Boots: 0*** - Number of times the system has been restarted (Restart Counter).
- ***ID = 93 0 12 20*** - System's identity number as defined by the user

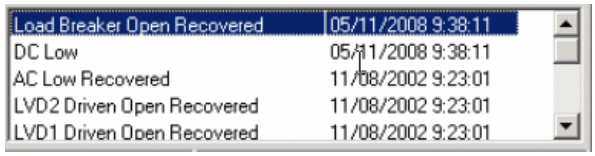
3.6.2. PSBC12XX Management Software *NET*

A sample display of communication data for PSBC12XX Management Software *NET* is:

The meaning of this display is:

- ***Run Time: 22:00:57*** - Length of time since the controller was restarted
- ***S/N: 23032*** - Controller's serial number
- ***Last Response***: Date and time the program was last updated with data from the controller

3.7. Event Log


Load Breaker Open Recovered 05/11/2008 9:38:11
DC Low 05/11/2008 9:38:11
AC Low Recovered 11/08/2002 9:23:01
LVD2 Driven Open Recovered 11/08/2002 9:23:01
LVD1 Driven Open Recovered 11/08/2002 9:23:01

The ***Event Log*** displays the history of the power system's faults.

Right-clicking the ***Event Log*** opens the ***Event Log*** menu which contains the following options:

- ***View log*** - Full screen view of the log with an option for printing it
- ***Sort log*** - Sorts the events in the log according to date or alphabetic order
- ***Clear event log*** - Erases the contents of the ***Event Log*** from the controller and the local database on your computer

3.8. Toolbar (Net only)

Figure 4. PSBC12XX Management Software *Net's* Toolbar

The buttons on the toolbar fulfill the same functions as some of the Menu options and control buttons. The following table describes the connection between the toolbar buttons, the menu options, the keyboard shortcuts, and the control buttons on the picture of the controller.

Table 3. Toolbar Buttons

Button	Keyboard Shortcut	Menu Options	Control Buttons
Preferences		View Menu>Preferences	
View Settings		Tools Menu>Settings	
Go Battery Boost	CTRl+B	Battery Menu>Go Boost	EQ
Go Battery Floating	CTRL+F	Battery Menu>Go Floating	
Test Battery	CTRL+T	Battery Menu>Test	Batt Test
Abort Battery Test	CTRL+ALT+T	Battery Menu>Abort Test	
Restart Controller		Tools Menu>Restart Controller	Reset
View Log		Log Menu>View Log	

4. Menus

The options in the following menus enable you to view additional information about the power system's status and to manage the system by changing its default or current parameters.

- File Menu
- Connection Menu (Serial Only)
- View Menu (Net only)
- Tools Menu
- Log Menu
- Battery Menu
- Help Menu

4.1. File Menu

Choose the ***Exit*** option to close PSBC12XX Management Software.

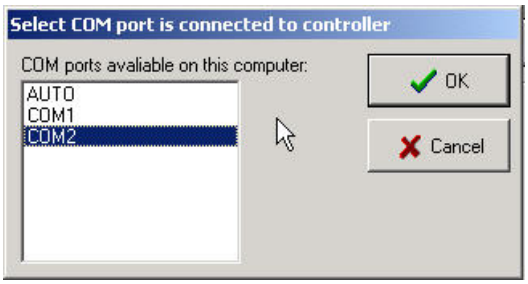
4.2. Connection Menu (Serial only)

The ***Connection*** menu's options let you control the computer's connection to the controller:

- Com Port
- Modem
- Wait for Alarm Trap

4.2.1. Com Port

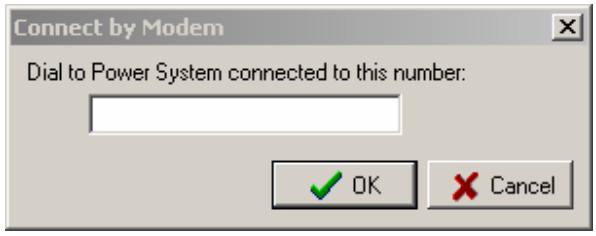
Choosing the ***Com Port*** option opens the ***Select COM port connected to controller*** window in which you can select the port connecting the computer with the controller.



Click the Com port you want to use to connect to the controller or click ***AUTO*** if you want the computer to select the port.

4.2.2. Modem

Choosing the ***Modem*** option makes ***Connect by Modem*** window appear.



Enter the telephone number (including area codes if necessary) of the power system in the ***Dial to Power System connected to this number*** field.

4.2.3. Wait for Alarm Trap

This option makes the program wait for the controller to contact it when there is an alarm.

4.3. View Menu

Choose the ***View*** menu>***Preferences*** option to open the ***Preferences*** window. The options in this window are for computers that work on an older network infrastructure such as modem lines, ISDN, etc. They are explained in the following table.

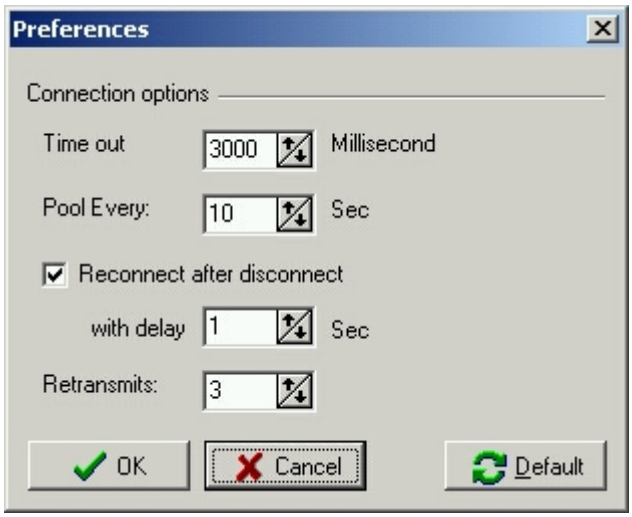


Figure 5. Preferences Window

Table 4. Preferences Window Parameters

Parameters	Description
Time out	Sets the length of time that must elapse without communication with the controller before there is a "No communication" alarm and the computer is considered to be disconnected from the controller.
Poll every	Sets how often the status of the power system is checked (polled)
Reconnect after disconnect	Enables/disables the ability of the program to automatically attempt reconnecting to the controller after it is disconnected
with delay	Sets how long the computer must be disconnected from the controller before the program can automatically attempt to reconnect them.
Retransmits	Sets how many times the program automatically attempts to reconnect the controller to the computer.

4.4. Tools Menu

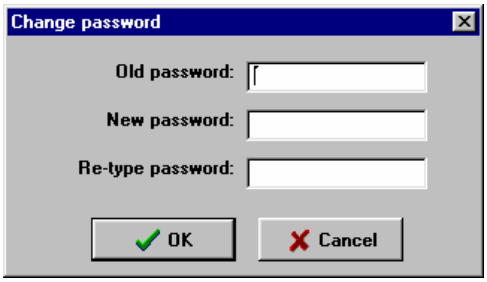
The ***Tools*** menu contains the following options:

- ***Settings*** - Opens the ***Settings*** window in which you can change the controller's configuration *(see* Configuring PSBC12XX, *page 21)*
- ***Set Alarm Off*** - Silences the audible alarm (mute)
- ***Restart Controller*** - Restarts the controller (this does not influence the operation of the power system)
- ***Reset Restart Counter*** *(Serial version only)* - Resets to zero the ***Restart Count*** meter at the bottom of the Main Screen.
- ***Set Current Offset*** *(Serial version only)* - Sets the amount by which the measurement of the current has to be corrected to be accurate.
- ***Limit Setting*** *(Serial version only)* - Opens a window in which you can specify the permitted range of values voltages can be given when configured in the ***Settings*** window's ***Set Values*** screen.
- ***Set Password*** - Changes the password *(see* Set Password, *page 18)*
- ***Relay Test*** *(Serial version only)* - Starts a test of each of the controller's four relays
- ***Set Calibration Values*** - Enter the actual (measured) value of the input and output current and voltage

4.5. Set Password

This option allows you to change your password.

To change your password:



1. Enter your old password in the ***Old password*** field.
2. Enter your new password in the ***New password*** field.
3. Re-enter your new password in the ***Re-type password*** field.

⚠ **Note:** *When using this program for the first time, the* **Old Password** *field should be left blank.*

4.6. Log Menu

The ***Log*** menu is the same ***Event Log*** menu that appears when you right-click the ***Event Log*** on the Main Screen *(see Event Log, page 12)*.

4.7. Battery Menu

The ***Battery*** menu contains the following options that enable you to change the mode in which the batteries operate:

- ***Go Floating*** – Manually returns the batteries to normal charge mode
- ***Go Equalizing (Boost)*** - Manually changes the batteries charge mode to Equalizing mode.
- ***Battery Test*** - Manually starts a test of the power system's batteries. The time remaining in the test is displayed on the screen for the duration of the battery test. When the test is finished, the results are displayed on the screen.
- ***Abort Battery Test*** *(Net Version only)* - Manually stops a battery test.
- ***LVD1*** - Closes or opens the LVD1 switch that connects the batteries to the load.
- ***LVD2*** - Closes or opens the LVD2 switch that connects the batteries to the load.

To change the batteries' operating mode:

Click one of the options in the ***Battery*** menu.

⚠ **Note:** *The batteries' current mode is unavailable in the* **Battery** *menu.*

4.8. Help Menu

The ***About*** option in this menu provides precise information about the program's name and version number.

The ***About*** option in PSBC12XX Management Software *Net* also provides more information about the controller.

5. Configuring PSBC12XX

The PSBC12XX controller can be configured via the options in the ***Settings*** window.

To open the *Settings* window:

Choose the ***Tools*** menu>***Settings*** option.

The ***Settings*** window is divided into four screens:

- General Configuration
- Set Values
- Set Alarms
- Set Dry Contacts

The parameter values displayed in the ***Settings*** window come from the controller. The ***Settings*** window is automatically updated when the values of these parameters are changed in the controller.

To use the Settings window to change the configuration of the controller:

1. Change the value of field(s) in one of the ***Settings*** window screens.
2. Use one of the following three options for sending the new settings to the controller:
    - Click the ***Apply*** button to send the settings to the controller and keep the ***Settings*** window open so you can continue to modify settings in it.
    - Click the ***OK*** button to send the settings to the controller and close the ***Settings*** window.
    - Click the ***Save User Default*** button to save the settings as User Default settings.

To restore the original values to fields in the Settings window:

Click the ***Default*** button.

To restore the saved User Default values to fields in the Settings window:

Click the ***Restore User Default*** button.

5.1. General Configuration

The ***General Configuration*** screen sets the value of the changeable general power system parameters described in Table 5.

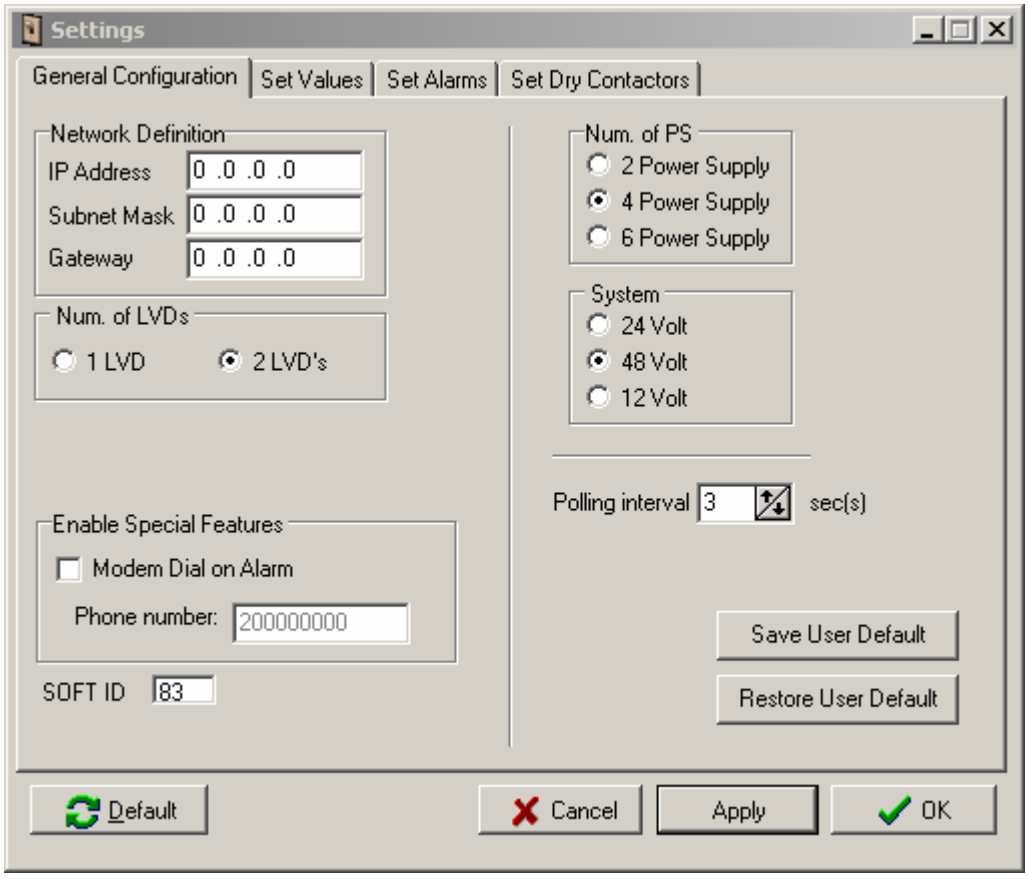


Figure 6. General Configuration Screen

Table 5. General Configuration Parameters

Parameters	Meaning
Network Definition	
IP Address	Legal address of the power system
Subnet Mask	Address of the power system on the local network
Gateway	Address of the gateway to the power system's local network
Num. of PS	*(Serial version only)* - Number of rectifiers in the power system. Should be set to the number of rectifiers actually installed in the system, or the next highest number. For example, if 3 rectifiers are installed, set the number of PSs to ***4 Power Supply***.
Num. of LVDs	Number of LVDs in the power system
System	*(Serial version only)* -Output voltage of power system
Enable Special Features	*(Serial version only)*
Modem Dial on Alarm	Modem dials a telephone number to notify about an alarm
Phone number	Telephone number the modem dials in case of an alarm
Soft ID	*(Serial version only)* - User-specified ID number of the power system
Polling interval	*(Serial version only)* – Sets how often the information displayed on the Main Screen is updated, in seconds.

5.2. Setting Values

This screen allows you to define the nominal values of the power system parameters described below. All of these parameters affect the operation of the power system as soon as you click the ***OK*** or ***Apply*** button. The exceptions are the parameters with a check box next to them. - they only take affect when their check box is selected:

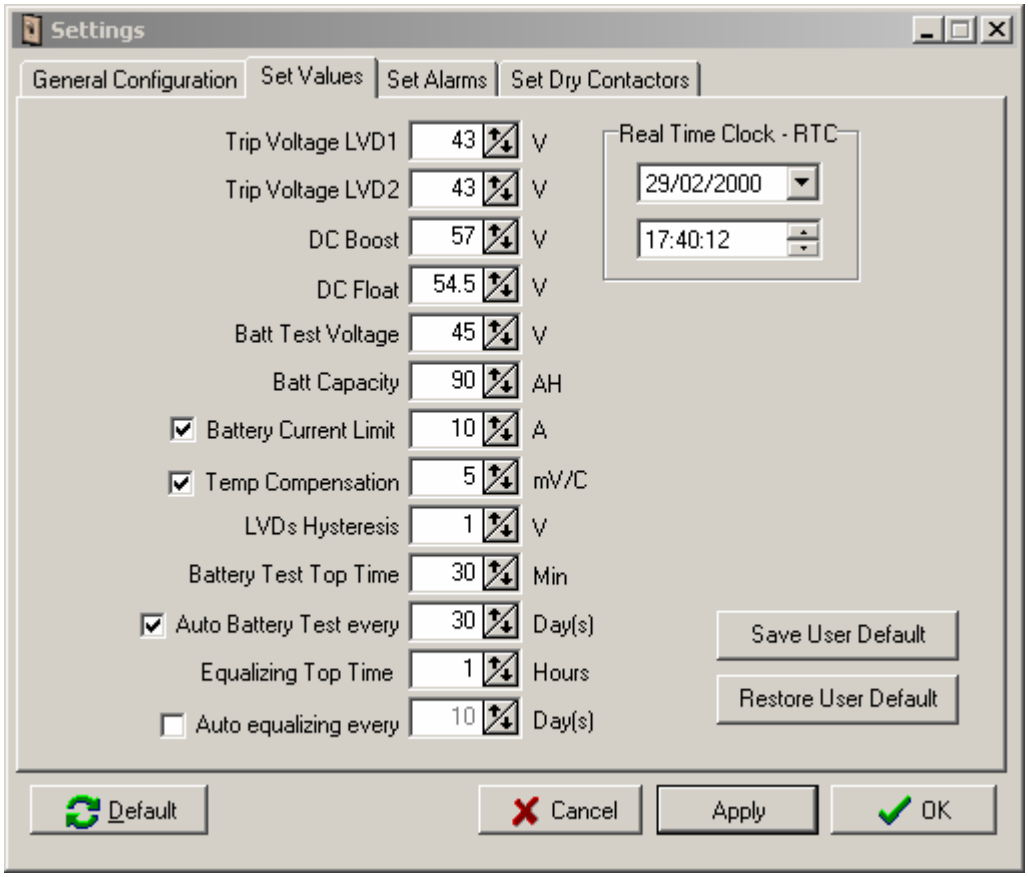


Figure 7. Set Values Screen

Table 6. Set Values Parameters

Parameters	Meaning
Trip Voltage LVD1	Threshold voltage for opening Low Voltage Disconnector 1
Trip Voltage LVD2	Threshold voltage for opening Low Voltage Disconnector 2
DC Boost	DC output voltage when battery is in Equalizing mode
DC Float	DC output voltage when battery is in Floating mode
Batt Test Voltage	Output voltage of rectifiers drops to this level during battery test
Batt Capacity	Battery's Amperes per hour nominal discharge capacity
Battery Current Limit	Battery charge current limit: prevents too high current destroying battery

Parameters	Meaning
Temp Compensation	Coefficient by which the charge voltage for batteries is modified to compensate for high or low battery temperature
LVDs Hysteresis	Gap between the opening and closing voltage of an LVD
Batt Test Top Time	Absolute maximum time limit for battery test (minutes) - test aborts if time limit exceeded
AutoBatt Test every	Number of days between automatic battery tests
Equalizing Top Time	Absolute maximum time limit for performance of accelerated battery charging (hours) - charging aborts if time limit exceeded
Auto Equalizing period	Number of days between automatic accelerated battery charging
Real Time Clock – RTC	Sets the date and time of the controller's Real Time Clock

5.3. Setting Alarms

This screen allows you to specify the minimum and maximum limits of the permitted range for the power system parameters described below. An alarm is set off when a power system parameter is outside the specified range.

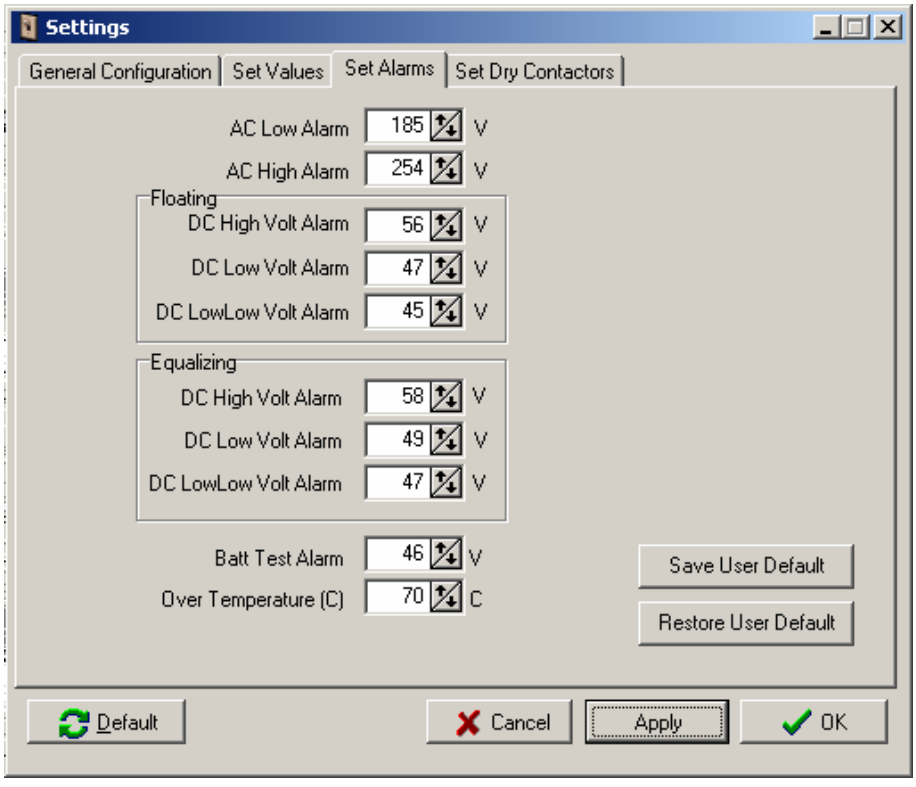


Figure 8. Set Alarms Screen

The significance of these alarms thresholds is explained in the following table:

Table 7. Set Alarms Parameters

Alarm	Meaning
AC Low Alarm	AC voltage ≤ this number triggers an alarm
AC High Alarm	AC voltage ≥ this number triggers an alarm
DC High Voltage Alarm (Floating)	DC output voltage ≥ this number triggers an alarm in Floating mode
DC Low Voltage Alarm (Floating)	DC output voltage ≤ this number triggers an alarm in Floating mode
DC LowLow Volt Alarm (Floating)	DC output voltage ≤ this number triggers an alarm in Floating mode
DC High Volt Alarm (Equalizing)	DC output voltage ≥ this number triggers an alarm in Equalizing mode
DC Low Volt Alarm (Equalizing)	DC output voltage ≤ this number triggers an alarm in Equalizing mode
DC LowLow Volt Alarm (Equalizing)	DC output voltage ≤ this number triggers an alarm in Equalizing mode
Batt Test Alarm	Battery output voltage during test < this number triggers an alarm
Over Temperature	Battery temperature ≥ this number triggers an alarm

5.4. Setting Dry Contacts

This screen enables you to specify which of the faults described below are monitored by each dry contact. It does this by allowing you to link faults to each of the power system's three dry contacts. A fault can be linked to more than one contact. An unlimited number of faults can be linked to each contact.

When a linked fault is active, its LED lights up in the ***Fault Status*** list in the Main Window.

Each of the sixteen faults listed on the screen has four lights next to it (one for each contact). A light can have one of three colors:

- Gray - fault isn't linked to that dry contact
- Green - fault is linked to that dry contact
- Red - fault is active.

To connect/disconnect a fault and a contact:

Click on that contact's light next to the fault.

⚠ **Note:** *Ignore the LEDs in column* **4** *on the* **Set Dry Contactors** *tab of the* **Settings** *screen (see Figure 9).*

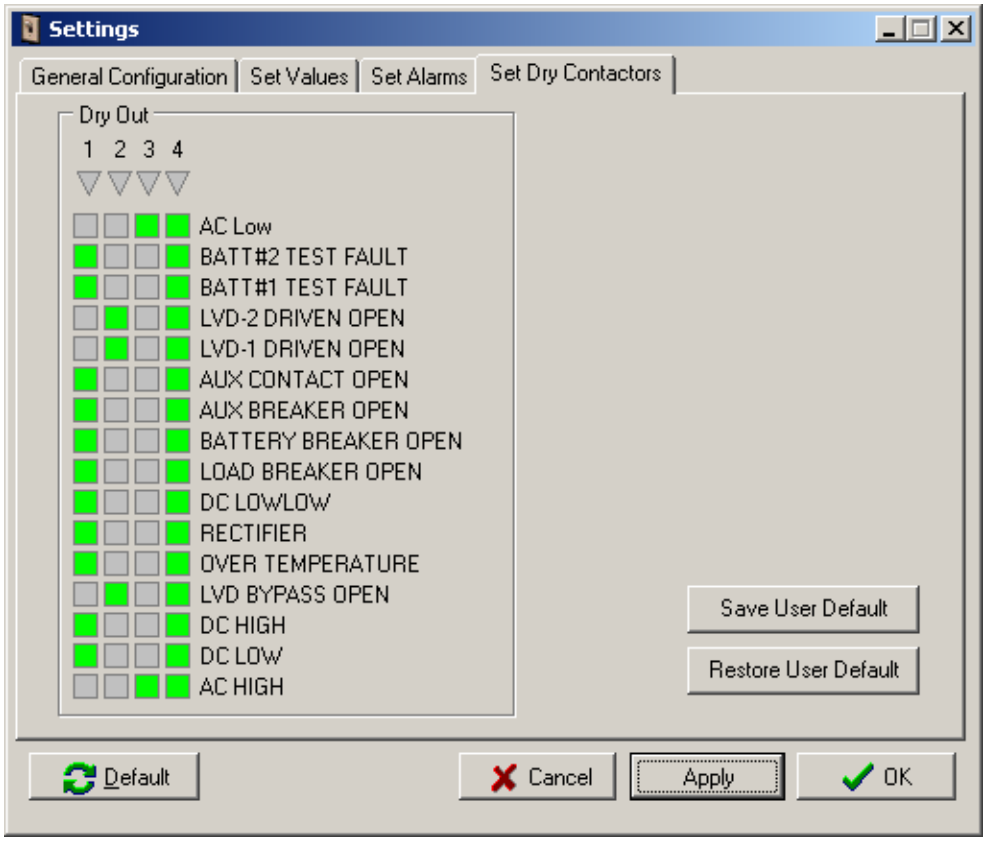


Figure 9. Set Dry Contactors Screen

The significance of these faults is explained in the following table:

Table 8. PSBC12XX Faults

Fault	Meaning
AC Low	Low voltage in mains
Batt#2 Test fault	Fault in Battery 2
Batt#1 Test fault	Fault in Battery 1
LVD-2 Driven open	Low Voltage Disconnector 2 opened due to low output voltage (batteries disconnected from system)
LVD-1 Driven open	Low Voltage Disconnector 1 opened due to low output voltage (batteries disconnected from system)
Aux Contact open	Auxiliary input dry contact open
Aux Breaker open	Auxiliary input circuit breaker open
Battery Breaker open	Battery circuit breaker open (batteries is disconnected from system - no system backup or charging)
Load Breaker open	Load circuit breaker open (load is disconnected from system)
DC LowLow	DC output too low
Rectifier	Rectifier is not OK
Over Temperature	Battery temperature high
LVD Bypass closed	Fault in LVD Bypass (prevents LVD from functioning)
DC High	DC output high
DC Low	DC output low
AC High	High voltage in mains

6. Operating PSBC12XX

You can control the operation of PSBC12XX with the software's toolbar buttons *(see* Toolbar (Net only), *page 12)*, the ***Settings*** window *(see* Configuring PSBC12XX, *page 21*), and the options in the Battery menu.

6.1. Battery Test

The battery test automatically starts and stops according to the parameters defined in the ***Settings*** window *(see* Configuring PSBC12XX, *page 21*).

To manually start a battery test:

Choose the ***Battery*** menu>***Battery Test*** option.

To manually stop a battery test:

Choose the ***Battery*** menu>***Abort Test*** option.

6.2. Battery Charge Mode

PSBC12XX automatically starts and stops Equalizing charging according to the parameters defined in the ***Settings*** window *(see* Configuring PSBC12XX, *page 21*).

To manually start equalizing:

Choose the ***Battery*** menu>***Go Equalizing (Boost)*** option.

To manually stop equalizing:

Choose the ***Battery*** menu>***Go Floating*** option.

6.3. LVD

An LVD (Low Voltage Disconnector) opens when low voltage is detected in the battery output or when the batteries have been operating continuously for a number of hours *(see* Configuring PSBC12XX, *page 21*). Opening an LVD shuts down a battery (to prevent battery damage). An LVD automatically opens when the output voltage is less than its trip voltage. It automatically closes when the output voltage increases to the value of its ***Trip Voltage*** + the value of the ***LVDs Hysteresis.*** You can also manually close or open LVDs.

To manually open LVD1:

Choose the ***Battery*** menu>***LVD1***>***Open*** option.

To manually close LVD1:

Choose the ***Battery*** menu>***LVD1***>***Close*** option.

To manually open LVD2:

Choose the ***Battery*** menu>***LVD2***>***Open*** option.

To manually close LVD2:

Choose the ***Battery*** menu>***LVD2***>***Close*** option.

6.4. Restarting the Controller

The controller must be restarted after changes are made to the controller's configuration.

To restart the controller:

Choose the ***Tools*** menu>***Restart Controller*** option.

7. Appendix A: Alarm Dry Contact Connector

The system also provides 3 floating signals for system status indication as well as the data provided by the controller via the RS-232 terminal.

These signals are accessible via a 9 socket D-Type connector on the rear panel.

The dry contacts are assigned to any events and are programmable by the software.

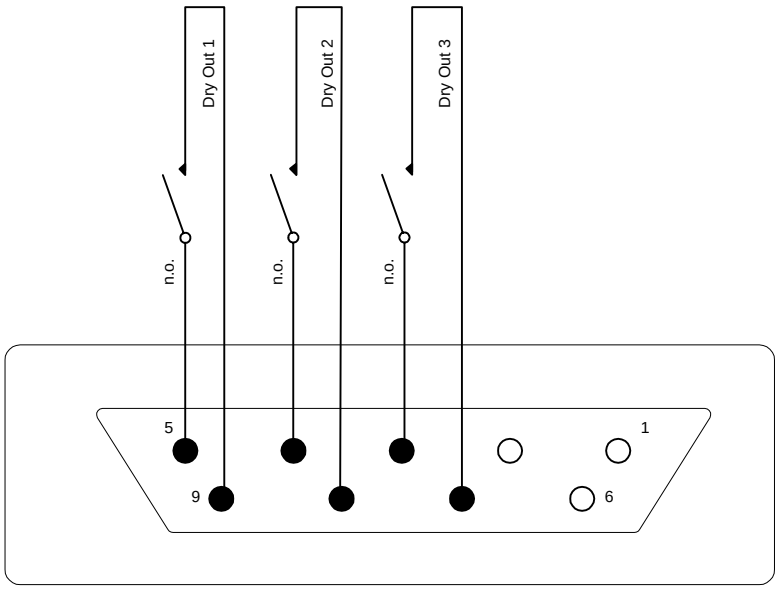


Figure 10. Alarm Connector Connections

"n.o." = Normally Open (the event will cause this switch to contact)

⚠ **Note:** *Switches* Dry Out 1 – Dry Out 3 *are 60V/0.3A or 24V/1A rated.*

8. Appendix B: IP Field Values

Table 9. IP Field Values

Field Description	Field Number
#define INDICATE_IP_MSB	20 */ B1 */
#define INDICATE_IP_2ND	21 */ B2 */
#define INDICATE_IP_3RD	22 */ B3 */
#define INDICATE_IP_LSB	23 */ B4 */
#define INDICATE_GATEWAY_MSB	24 */ B5 */
#define INDICATE_GATEWAY_2ND	25 */ B6 */
#define INDICATE_GATEWAY_3RD	26 */ B7 */
#define INDICATE_GATEWAY_LSB	27 */ B8 */
#define INDICATE_MASK_MSB	28 */ B9 */
#define INDICATE_MASK_2ND	29 */ B10 */
#define INDICATE_MASK_3RD	30 */ B11 */
#define INDICATE_MASK_LSB	31 */ B12 */

9. Appendix C: Troubleshooting

Q: Why don't I receive the temperature sensor status?

A: From 17/10/02 the controller software supports the temperature sensor status feature. If the mouse is over the temperature indicator in the main PSBC12XX Management Software screen the tool tip shows the status of the two temperature sensors. If there is a fault in one of the sensors, a Temp. Sensor Fault led is lit on the Fault Status panel. In controller software revisions from before 17/10/02 the tool tip is: Not Supported.

Q: Why are there no new entries in the alarm log?

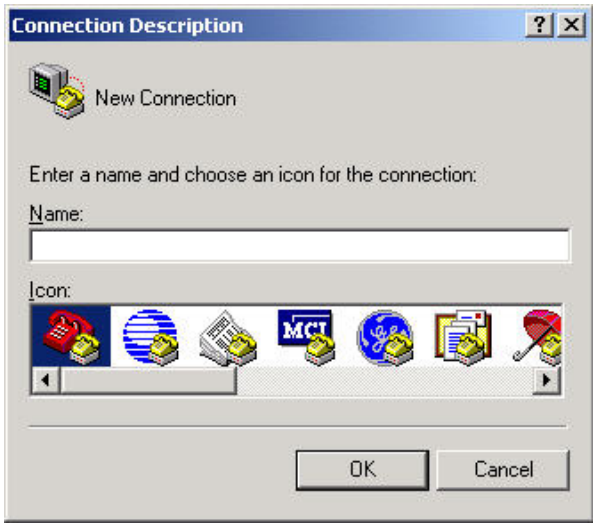
A: The date of the controller is wrong. The first thing to do after installing the controller and the software is to check that the controller date is updated and update it if necessary.

10. Appendix D: Configuring the Modems

There are a number of available programs that enable you to configure modems, such as Window's ***Hyper Terminal*** Program.

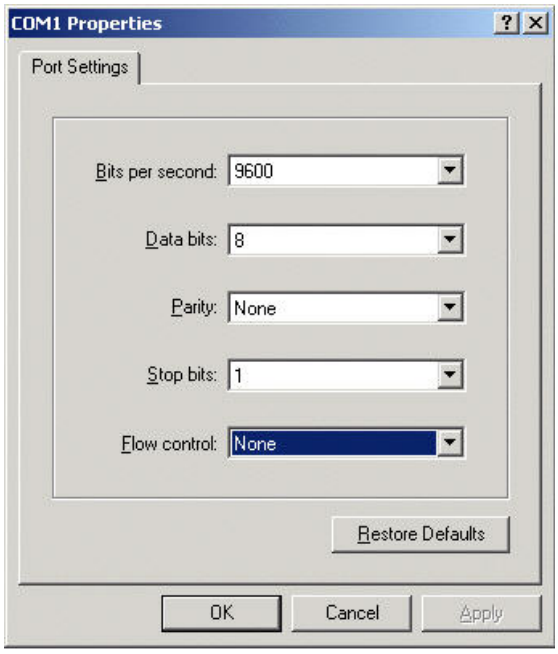
To use Hyper Terminal to configure the modems connected to the power system and the computer:

1. Choose the option ***Start>Programs>Accessories >Communications>Hyper Terminal***. (If ***Hyper Terminal*** isn't in the ***Start*** menu, install it from the Windows setup disk.)
2. Enter a name into the ***Name*** field of the ***Connection Description*** window.
3. Press ***OK.***

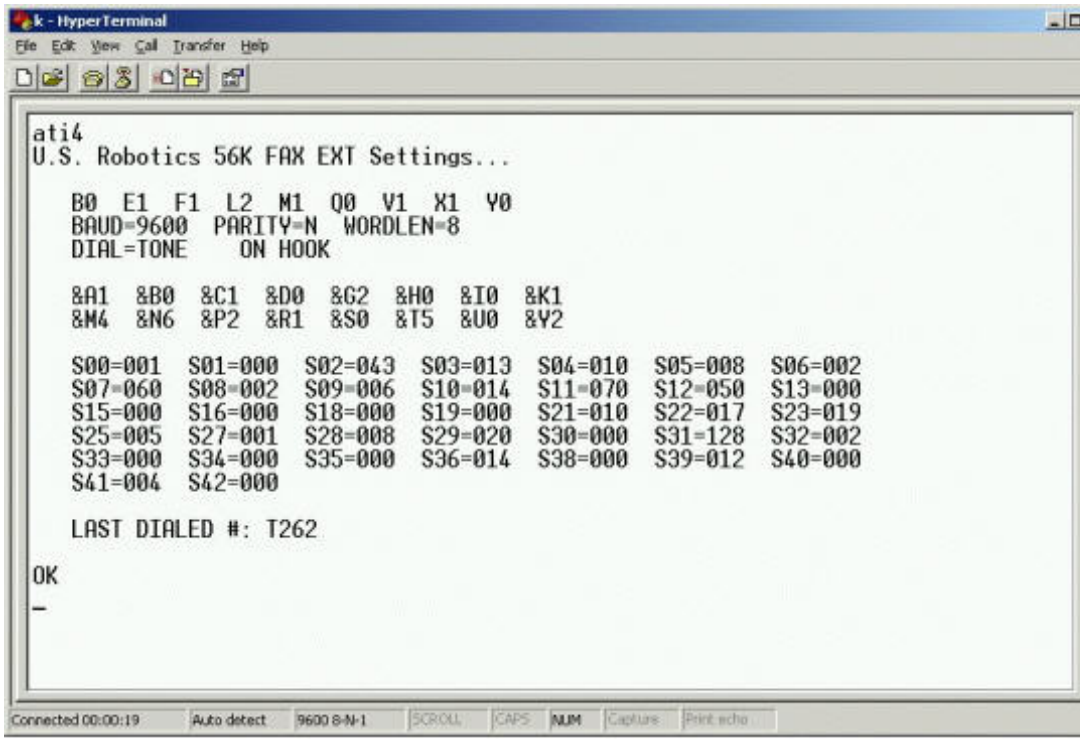


4. In the ***Connect Using:*** field, choose the Com Port connected to the modem
5. Click ***OK.***

6. Enter the following values into the fields in the Com Properties window:
   - Bits per second: 9600
   - Data bits: 8
   - Parity: None
   - Stop bits: 1
   - Flow Control: None
7. Click ***OK***.



8. Type the ATi4 into the ***Hyper Terminal*** window to display the settings for the modems.



9. The settings should be the same as those in the following table. To change a setting:
   a. Type in the code from the table.
   b. Press <Enter>; OK appears on the screen.

10.Type AT&Y1 and then AT&WO to save the new settings.

11.Activate PSBC12XX Management Software and select the Port and telephone number for the modem (see Connection Menu (Serial only), page 15).

12.Choose ***Tools menu>Settings>General Configuration*** and select ***Modem Dial on Alarm***.

10.1. Example of Modem settings

(for U.S Robotics Ext. Fax/Modem)

Table 10. Modem Settings (Example)

Description	Settings of the Modem Connected to the Computer	Settings of the Modem Connected to the Controller	Description
ITU-T answer sequence	ATB0	=	
Modem displays keyboard commands	ATE1	=	
Local echo off; receiving system may send a remote echo of data it receives	ATF1	=	
Medium speaker volume	ATL2	=	
Speaker on until connect	ATM1	=	
Displays result codes	ATQ0	=	
Verbal codes	ATV1	=	
Sets result code displayed	ATX1	=	
Use profile 0 setting in NVRAM	ATY0	=	
Protocol indicators added-LAPM/MNP/ONE(error control) and V.42 bis/MNP5 (data compression)	AT&A3	AT&A1	ARQ result codes disabled
Fixed serial port rate	AT&B1	AT&B0	Variable, follows connection rate
Normal CD operation	AT&C1	=	
Normal DTR operation	AT&D2	AT&D0	DTR override
1800Hz guard tone, U.K requires B0 setting	AT&G2	=	
Hardware flow control, clear to send(CTS)	AT&H1	AT&H0	Flow control disabled
Software flow control: ***disabled***	AT&I0	=	
data compression: ***Auto disable/enable***	AT&K1	=	

Description	Settings of the Modem Connected to the Computer	Settings of the Modem Connected to the Controller	Description
Sets error control (ARQ) for connections at 1200 bps and higher: ***normal/ARQ***	AT&M4	=	
Connection speed is determined by remote modem	AT&N0	AT&N6	Connection speed 9600bps
	AT&P2	=	
Received data to computer only on RTS	AT&R2	AT&R1	Modem ignores RTS
DSR override; always ON	AT&S0	=	
Prohibits remote digital loopback	AT&T5	=	
No restrictions on the minimum speed for the connection	AT&U0	=	
Number of rings before modem answers = 1	ATS0=1	=	